

Remarks

Claims 1-53 were originally filed in this case. Claims 11-20 and 41-53 were withdrawn from consideration following a Restriction Requirement dated May 30, 2003.

In the Office Action dated June 23, 2003, the Examiner rejected claims 1-3, 5, 8, 9, 21, 22, 24, 27-29, 31, 33, 34, 35, 38 and 39 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,314,227 to Eventoff (Eventoff). The Examiner rejected claims 2, 10, 23, 30 and 40 under 35 U.S.C. § 103(a) as being unpatentable over Eventoff in view of U.S. Patent No. 6,121,869 to Burgess (Burgess) or U.S. Patent No. 6,531,951 to Serban *et al.* (Serban). The Examiner rejected claims 4, 23 and 32 under 35 U.S.C. § 103(a) as being unpatentable over Eventoff in view of Serban. The Examiner rejected claims 6, 7, 25, 26, 36 and 37 under 35 U.S.C. § 103(a) as being unpatentable over Eventoff in view of U.S. Patent No. 6,087,925 to DeVolpi (DeVolpi). Applicants respectfully disagree with the Examiners rejections and reconsideration is requested in light of the following arguments.

Independent claim 1 provides an electronic pressure sensitive transducer producing an electrical signal indicative of applied pressure. The transducer includes *a printed circuit board accepting electronic elements for processing the transducer electrical signal*. Conductive traces are formed on the printed circuit board to define a contact area. A flexible substrate having an inner surface is positioned over the contact area. An adhesive spacer substantially surrounds the contact area for attaching the flexible substrate to the printed circuit board. At least one resistive layer is deposited on the flexible substrate inner surface so as to contact at least two of the traces in response to pressure applied to the flexible substrate and thereby produce the electrical signal indicative of applied pressure.

Independent claim 21 provides a printed circuit board electronic pressure sensitive transducer assembly including *a printed circuit board accepting electronic elements for processing pressure transducer electrical signals*. Conductive traces are formed on the printed circuit board to define a contact area. A flexible substrate has an inner surface

a resistive ink is deposited on the flexible substrate inner surface. The resistive layer contacts

at least two of the contact area conductive traces in response to pressure applied to the flexible substrate.

Independent claim 31 provides a printed circuit board electronic pressure sensitive transducer assembly including *a printed circuit board accepting electronic elements for processing pressure transducer electrical signals*. Conductive traces are formed on the printed circuit board to define a contact area. A pedestal substantially surrounds the contact area forming a flat area higher than the conductive traces. A flexible substrate having an inner surface is positioned over the contact area. An adhesive spacer substantially surrounds the contact area to attach the flexible substrate and the pedestal. At least one resistive layer is deposited on the flexible substrate inner surface. The resistive layer contacts at least two of the contact area conductive traces in response to pressure applied to the flexible substrate.

The Examiner rejected claims 1, 21 and 31 as being anticipated by Eventoff. In support of these rejections, the Examiner posits that Eventoff discloses "printed circuit board 12 having room for accepting electronic elements such as the utilization circuit 28 at Fig. 4." (Page 2.) Figure 4 illustrates utilization circuit 28 completely separate from base member 12. Eventoff neither teaches nor suggests that base member 12 can accept electronic elements for processing pressure transducer signals.

The force sensing resistor (FSR) disclosed in Eventoff is described in Applicants' BACKGROUND OF THE INVENTION. Difficulty with previous FSRs is discussed on page 2, lines 11-24, as follows:

In most practical applications, the FSR must be connected to sensing and conditioning electronics in order to effectively operate. One way this may be accomplished is by connecting the FSR to a printed circuit board containing the electronics with a multi-conductor cable. Another way of connecting the FSR to support electronics is to adhere the FSR base directly to the circuit board containing the electronics. Electrical connection may be made between traces on the FSR and corresponding traces on the printed circuit board using z-tape, which only conducts in a direction perpendicular to the tape surface. While

FSR electrical traces are connected to the circuit board, increasing the likelihood of system failure. What is needed is a pressure sensitive transducer and a method for making such a

transducer that requires fewer components and fewer manufacturing steps without sacrificing transducer performance.

Applicants' solution to these problems places pressure transducer signal electronics on the same printed circuit board forming the base for the pressure transducer. Eventoff neither teaches nor suggests such a combination.

Claims 1, 21 and 31 are patentable over Eventoff. Claims 2-10 depend from claim 1 and are therefore also patentable. Claims 22-30 depend from claim 21 and are therefore also patentable. Claims 32-40 depend from claim 31 and are therefore also patentable.

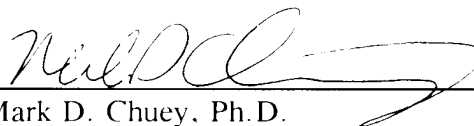
Claims 1-10 and 21-40 meet all substantive requirements for patentability. Applicants therefore respectfully request that this case be passed to issuance. No fee is believed due by filing this paper. However, any fee due may be withdrawn from Deposit Account No. 02-3978 as specified in the Application Transmittal.

The Examiner is invited to contact the undersigned to discuss any issue related to this case.

Respectfully submitted,

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By



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